Amendments to the Claims:

This listing of claims will replace all prior version, and listings, of the claims in the application:

Listing of Claims:

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1. (currently amended) A system for controlling traffic congestion within a buffered data switching network having a predetermined total buffer size, said system comprising:

(a) a packet counter for counting ~~the~~ a number of newly arriving packets in the switching network; and

(b) calculation means for calculating an average queue size, $\overline{Q}_t$, at time t as

$$\overline{Q}_t = \overline{Q}_{t-1} \times (1 - Alpha) + Q_t \times Alpha$$

where Q_t is an instantaneous queue size, $\overline{Q}_{t-1}$ is the average queue size at time $t-1$, and $Alpha$ is a queue-length averaging parameter;

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(c)~~(b)~~ threshold means for setting a packet-count threshold in accordance with the average queue size, for discarding a packet when the number of newly arriving packets reaches the packet-count threshold and when the average queue size exceeds a congestion threshold, and for resetting the packet counter when a packet is discarded.;

~~wherein when the number of newly arriving packets reaches the packet-count threshold and when the average queue size exceeds the congestion threshold, a packet is discarded and the packet counter is reset to a zero count.~~

2. (cancelled)

3. (currently amended) A system as in claim ~~2~~ 1, wherein the calculation means includes means to regularly updates the average queue size using an exponential averaging technique.

4. (currently amended) A system as in claim ~~3~~ 1, wherein ~~the average queue size at time t is calculated as:~~

$$\cancel{\overline{Q}_t = \overline{Q}_{t-1} \times (1 - Alpha) + Q_t \times Alpha}$$

~~where Q_t is an instantaneous queue size and $\overline{Q}_{t-1}$ is the average queue size at time $t-1$,~~ ~~and~~ $Alpha$ is ~~a queue length averaging parameter~~ assigned a value between zero and one.

5. (currently amended) A system as in claim [[4]] 1, wherein a progressively increasing value of $Alpha$ is assigned with increasing level of traffic congestion.

6. A system as in claim 5, wherein the level of traffic congestion is indicated by the instantaneous queue size.

7. (currently amended) A system as in claim ~~3~~ 1, wherein the average queue size is updated after a predetermined number of cells have arrived since a previous packet discard.

8. (currently amended) A system as in claim ~~3~~ 1, wherein the average queue size is updated after a predetermined period of time has elapsed since a previous packet discard.

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9. A system ~~as in claim 2, further comprising~~ for controlling traffic congestion within a buffered data switching network having a predetermined total buffer size, said system comprising:

(a) a packet counter for counting ~~the~~ a number of newly arriving packets in the switching network; and

(b) calculation means for calculating an average queue size

(c) threshold means for dividing the total queue size into a pre-selected number of N regions, for setting a ~~wherein the threshold means sets the~~ packet-count threshold in accordance with the average queue size by using a descending staircase function $F(n)$, for discarding ~~such that~~ one of every $F(n)$ packets ~~is discarded,~~ when the average queue size is in a buffer region n, $1 \leq n \leq N$ and for resetting the packet counter when a packet is discarded.

10. A system as in claim 9, further comprising means for detecting traffic congestion by setting a congestion threshold and comparing the average queue size with the congestion threshold, such that a congestion condition is indicated by the average queue size being equal to or above the congestion threshold, and an absence of congestion is indicated otherwise.

11. A system as in claim 10, wherein the packet is discarded only during the congestion condition.

12. A system as in claim 10, wherein the packet counter begins to operate when traffic congestion is detected, and halts operation when an absence of traffic congestion is detected.

13. (currently amended) A system as in claim ~~2~~9, wherein the threshold means further includes means ~~further comprising means~~ for dividing the total queue size into a pre-selected number of M regions, for high-priority traffic defining a high-priority congestion threshold, and a the pre-selected number of N regions for low-priority traffic defining a low-priority congestion threshold, wherein the threshold means sets the packet-count threshold by using two functions $F(n,m)$ and $F(m)$, such that:

when the average queue size of high-priority traffic is above the high-priority congestion threshold and is in the buffer region m, $1 \leq m \leq M$, one of every $F(m)$ high priority packets is discarded; and

when the average queue size of low-priority traffic is above the low-priority congestion threshold and is in the buffer region n, $1 \leq n \leq N$, one of every $F(n,m)$ low priority packets is discarded.

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14. A system as in claim 13, wherein the function $F(m)$ is a descending staircase function in the buffer region m, and the function $F(n,m)$, is a multivariable function of m and n, which has a descending staircase behaviour in the buffer region n for a fixed value of m.

15. A system as in claim 1, further comprising means for applying a priority scheme for discarding packets, which provides a differentiated service among service classes sharing a common buffer.

16. A system as in claim 1, wherein the threshold means uses a look-up table.

17. A system as in claim 1, wherein the threshold means sets the packet-count threshold upon arrival of a new packet into the system.

18. A system as in claim 1, wherein the threshold means sets the packet-count threshold upon departure of a packet from the system.

19. (currently amended) A method for controlling traffic congestion within a buffered data switching network having a predetermined total buffer size, said method comprising the steps of:

(a) counting ~~the~~ a number of newly arriving packets;

(b) calculating an average queue size wherein the average queue size at time t is calculated as:

$$\overline{Q}_t = \overline{Q}_{t-1} \times (1 - Alpha) + Q_t \times Alpha$$

where Q_t is an instantaneous queue size, $\overline{Q}_{t-1}$ is the average queue size at time $t-1$, and $Alpha$ is a queue-length averaging parameter;

~~(b)~~(c) setting a packet-count threshold; and

~~(c)~~(d) discarding a packet and resetting the packet[[-counter]] count, when the number of newly arriving packets reaches the packet-count threshold and the average queue size exceeds ~~the~~ a congestion threshold.

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20. (cancelled)

21. (currently amended) A method as in claim ~~20~~ 19, wherein the calculating step regularly updates the average queue size using an exponential averaging technique.

22. (currently amended) A method as in claim ~~21~~ 19, wherein ~~the average queue size at time t is calculated as:~~

$$\cancel{\overline{Q}_t = \overline{Q}_{t-1} \times (1 - Alpha) + Q_t \times Alpha},$$

~~where Q_t is an instantaneous queue size and $\overline{Q}_{t-1}$ is the average queue size at time $t-1$, and~~ $Alpha$ is ~~a queue-length averaging parameter~~ assigned a value between zero and one.

23. (currently amended) A method as in claim ~~22~~ 19, wherein a progressively increasing value of $Alpha$ is assigned with increasing level of traffic congestion.

24. A method as in claim 23, wherein the level of traffic congestion is indicated by the instantaneous queue size.

25. A method as in claim 21, wherein the average queue size is updated after a predetermined number of cells have arrived since a previous packet discard.

26. A method as in claim 21, wherein the average queue size is updated after a predetermined period of time has elapsed since a previous packet discard.

27. (currently amended) A method ~~as in claim 20, further~~ for controlling traffic congestion within a buffered data switching network having a predetermined total buffer size, said method comprising:

(a) counting the number of newly arriving packets;

(b) calculating an average queue size

(c) ~~a step of~~ dividing the total buffer size into a pre-selected number of N regions~~,~~;

(d) setting a packet-count threshold in accordance with ~~wherein the setting step sets the packet-count threshold by using~~ a descending staircase function $F(n)$~~,~~;

(e) discarding ~~such that~~ one of every $F(n)$ packets ~~is discarded~~ and resetting the packet count, when the average queue size is in a buffer region n, $1 \le n \le N$.

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28. A method as in claim 27, further comprising a step of detecting traffic congestion by setting a congestion threshold and comparing the average queue size with the congestion threshold, such that a congestion condition is indicated by the average queue size being above the congestion threshold, and an absence of congestion is indicated otherwise.

29. A method as in claim 28, wherein the packet is discarded only during the congestion condition.

30. A method as in claim 28, wherein the packet counter begins to operate when traffic congestion is detected, and halts operation when an absence of traffic congestion is detected.

31. (currently amended) A method as in claim ~~20~~27, ~~further comprising a~~ wherein the step of dividing the total buffer size includes dividing the total buffer size into both a pre-selected number of M regions, for high-priority traffic defining a high-priority congestion threshold, and a pre-selected number of N regions for low-priority traffic defining a low-priority congestion threshold, wherein the step of setting the packet-count threshold ~~step~~ sets the packet-count threshold by using two functions $F(n.m)$ and $F(m)$, ~~such that:~~ and wherein the step of discarding includes discarding one of every $F(m)$ high priority packets when the average

queue size of high-priority traffic is above the high-priority congestion threshold and is in the buffer region m, $1 \leq m \leq M$, ~~one of every $F(m)$ high priority packets is discarded;~~ and discarding one of every $F(n,m)$ low priority packets when the average queue size of low-priority traffic is above the low-priority congestion threshold and is in the buffer region n, $1 \leq n \leq N$~~, one of every $F(n,m)$ low-priority packets is discarded~~.

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32. A method as in claim 31, wherein the function $F(m)$ is a descending staircase function in the buffer region m, and the function $F(n,m)$ is a multivariable function of m and n, which has a descending staircase behaviour in the buffer region n for a fixed value of m.

33. A method as in claim 19, further comprising a step of applying a priority scheme for discarding packets, which provides a differentiated service among service classes sharing a common buffer.